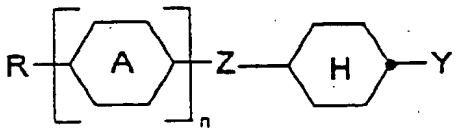
Patent Claims

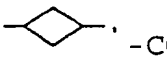
SUB B1

1. Liquid-crystalline medium based on a mixture of polar compounds of positive dielectric anisotropy, characterized in that it comprises one or more compounds of general formula I



I

in which

R is H, an alkyl or alkenyl radical having 1 to 15 carbon atoms which is unsubstituted, monosubstituted by CN or CF_3 or at least monosubstituted by halogen, where one or more CH_2 groups in these radicals may also, in each case independently of one another, be replaced by -O-, -S-,  , -CO-, -CO-O-, -O-CO- or -O-CO-O- in such a way that O atoms are not linked directly to one another,

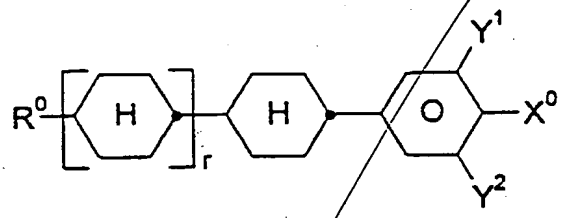
is a trans-1,4-cyclohexylene ring, in which, in addition, one or two CH_2 groups may be replaced by -O- and/or -S-, or a cyclohexenylene ring,

Y is halogenated alkyl, halogenated alkenyl, halogenated alkoxy or halogenated alkenyloxy having up to 6 carbon atoms,

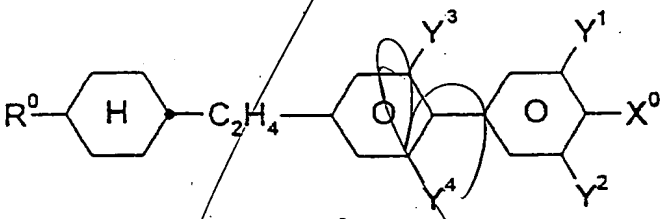
Z is $-CH_2O-$, $-OCH_2-$, $-CH_2CH_2-$, $-CH=CH-$, $-CF_2O-$, $-OCF_2-$, $-C_2F_4-$ or a single bond, and

n is 1 or 2.

2. Medium according to Claim 1, characterized in that it additionally comprises one or more compounds selected from the group consisting of the general formulae II to VIII:



II



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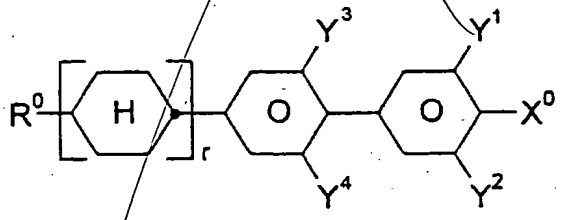

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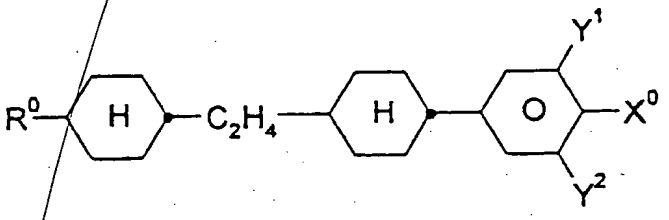

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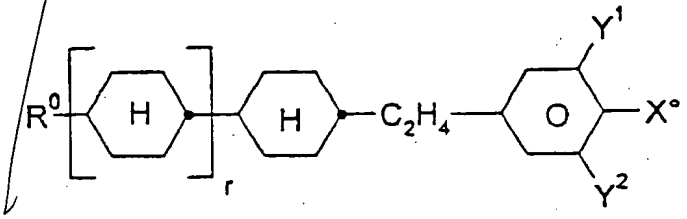

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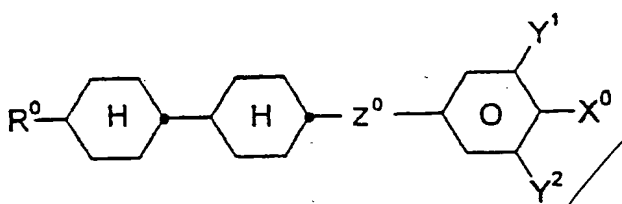

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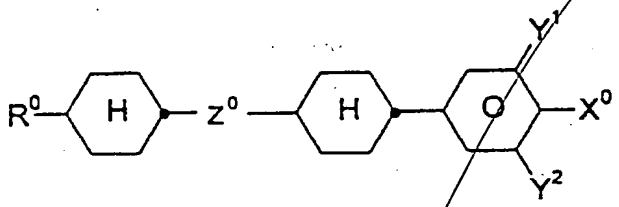


VIII

in which the individual radicals have the following meanings:

R^0: n-alkyl, oxaalkyl, fluoroalkyl or alkenyl, in each case having up to 7 carbon atoms;

X^0: F, Cl, halogenated alkyl, alkenyl or alkoxy having 1 to 6 carbon atoms;

Z^0: $-C_4H_8-$, $-CF_2O-$, $-OCF_2-$, $-C_2F_4-$, $-CH_2O-$, $-OCH_2-$ or COO-;

Y^1, Y^2, Y^3 and Y^4: each, independently of one another, H or F

r: 0 or 1.

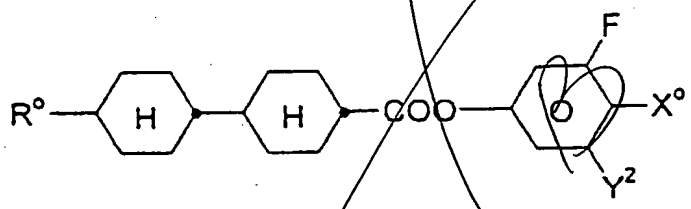
3. Medium according to Claim 2, characterized in that the proportion of compounds of the formulae I to VIII in the mixture as a whole is at least 50% by weight.

4. Medium according to Claim 1 or 2, characterized in that the proportion of compounds of the formula I

in the mixture as a whole is from 5 to 50% by weight.

5. Medium according to at least one of Claims 2 to 3, characterized in that the proportion of compounds of the formulae II to VIII in the mixture as a whole is from 20 to 80% by weight.

6. Medium, according to Claim 1, characterized in that it additionally comprises one or more compounds of the formula

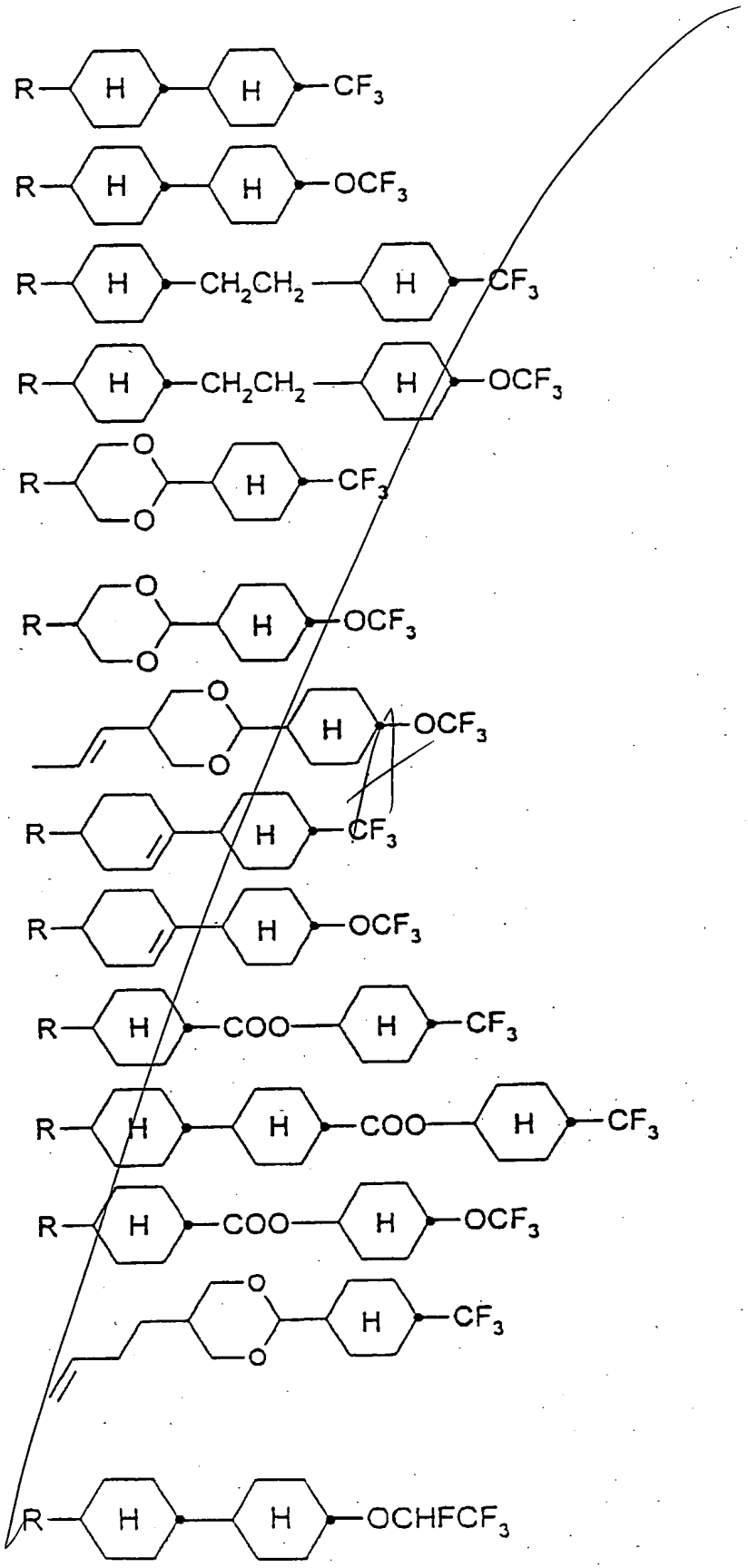


in which R^0, X^0 and Y^2 are as defined in Claim 2.

7. Medium according to Claim 2 or Claim 6, characterized in that X^0 is F or OCF_3, and Y^2 is H or F.

8. Medium according to one of Claims 1 to 7, characterized in that in the compound of the formula I, Y is OCF_3 or CF_3.

9. Medium according to one of Claims 1 to 8, characterized in that the compound of the formula I is selected from the group consisting of the compounds Ia to In:



Ia

Ib

Ic

Id

Ie

If

Ig

Ih

Ii

Ij

Ik

Il

Im

In

in which R is as defined in Claim 1.

10. Use of the liquid-crystalline medium according to Claim 1 for electro-optical purposes.

11. Electro-optical liquid-crystal display containing a liquid-crystalline medium according to Claim 1.